Increased Rice Yield Stability in Southern China

Improving yield stability is a major objective of agricultural progress. This objective has become even more important because our climate is changing, and the intensity and frequency of extreme weather events may increase in the future.

In an article recently published in Agricultural & Environmental Letters, researchers evaluate the trends of rice yield stability in 12 provinces in southern China using the currently available data collected from the World Rice Statistics database (from 1949 to 2013) and the database of National Bureau of Statistics of China (for 2014 and 2015).

The study showed that rice yield stability was significantly increased in 10 of the 12 provinces in southern China during the 67-year period from 1949 to 2015. The researchers stated that the increased rice yield stability can be attributed to advances in crop breeding, crop management, and public services such as releasing disaster warning information and sending technical experts to help.

This report suggests that a stable increase in crop production is achievable in southern China and other regions of the world with ongoing scientific, technological, and social innovation.


Optimizing Large-Scale Sampling to Inform Agricultural Management

The Southern Great Plains region of the United States has highly variable climate and weather, presenting farming challenges that are predicted to increase. Building and conserving healthy, resilient soil is one proposed method for increasing the resilience of agricultural systems in these regions. However, few studies have compared soil-health-managed farms with conventionally managed farms at the regional scale.

In an article recently published in Agricultural & Environmental Letters, researchers report on the pilot phase of a regional-scale study to determine the effects of different agricultural management practices on soil health. In addition, they report on the suitability of certain field-sampling techniques to regional-scale studies.

They found that there were few significant differences between soil-health-managed and conventionally managed fields with the exception of electrical conductivity. However, they did note that the stratification of soils on soil-health-managed fields was more pronounced than that on conventionally managed fields. Also, while their experimental framework was generally suitable, some modifications were needed to adapt it to a much larger scale and regional field conditions.

Their results indicate potential areas of interest for the full study, especially with regards to the stratification of soil-health-managed fields. Furthermore, they suggest that when engaging in regional-scale studies, relying on sampling methods used at smaller scales may introduce unexpected complications and, potentially, result in a less effective study.


Trends in relative yield residuals from 1949 to 2015 of 12 provinces in southern China. A decreased trend in the relative yield residuals indicates an increased trend in yield stability.